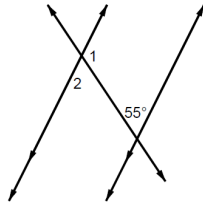


Worksheet 3.3 Parallel Lines

Find  $m\angle 1$  and then  $m\angle 2$ . State the theorems or postulates that justify your answers.

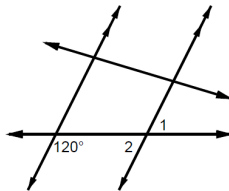
1.



$$\angle 1 = 125$$

$$\angle 2 = 55$$

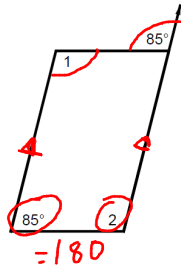
2.



$$\angle 1 = 60$$

$$\angle 2 = 60$$

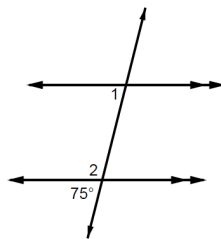
3.



$$\angle 1 = 85$$

$$\angle 2 = 95$$

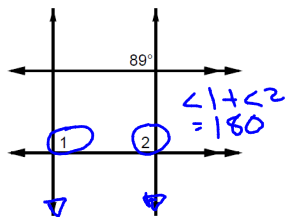
4.



$$\angle 1 = 75$$

$$\angle 2 = 105$$

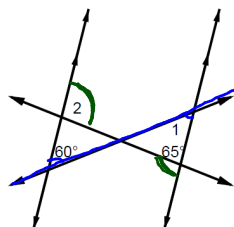
5.



$$\angle 1 = 91$$

$$\angle 2 = 89$$

6.

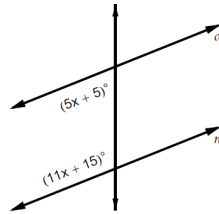


$$\angle 1 = 60$$

$$\angle 2 = 115$$

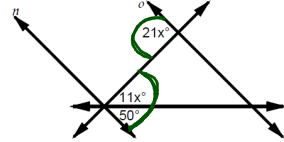
Determine the value of  $x$  for which  $n \parallel o$ .

7.



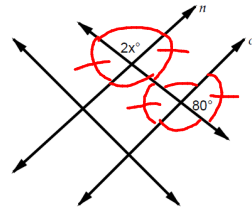
$$\begin{aligned} 5x + 5 + 11x + 15 &= 180 \\ 16x + 20 &= 180 \\ 16x &= 160 \\ x &= 10 \end{aligned}$$

8.



$$\begin{aligned} 21x &= 11x + 50 \\ 10x &= 50 \\ x &= 5 \end{aligned}$$

9.

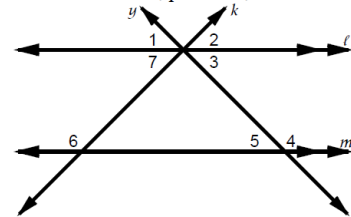


$$\begin{aligned} 2x + 80 &= 180 \\ 2x &= 100 \\ x &= 50 \end{aligned}$$

Section 3.3.nb

4

State the theorem, postulate, or definition that justifies each statement.



10.  $m\angle 3 + m\angle 4 = 180$

same side interior angles / parallel lines

11.  $\angle 1 \cong \angle 5$

corresponding angles

12.  $\angle 3 \cong \angle 5$

alternate interior

13.  $\angle 1$  and  $\angle 3$  are vertical angles

opposite angles WI intersecting lines

14.  $\angle 7 \cong \angle 2$

vertical pair

15.  $m\angle 5 + m\angle 4 = 180$

linear pair

Vertical angle - congruent

$\angle 2 \& \angle 4, \angle 1 \& 3, \angle 5 \& 7, \angle 6 \& 8$

linear pair - adjacent, add to 180

$\angle 1 \& \angle 2, \angle 3 \& \angle 4, \angle 5 \& 6, \angle 7 \& 8,$

$\angle 3 \& \angle 2, \angle 6 \& 7, \angle 1 \& 4, \angle 5 \& 8$

corresponding angles - same position

congruent

$\angle 1 \& \angle 5, \angle 2 \& \angle 6, \angle 4 \& 8,$

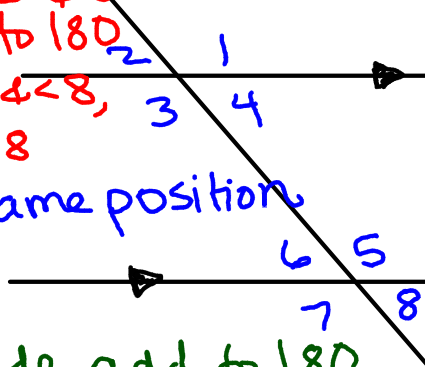
$\angle 7 \& 3$

same side interior - inside, add to 180

$\angle 3 \& \angle 6, \angle 4 \& 5$

alternate interior - inside, congruent

$\angle 3 \& \angle 5, \angle 4 \& \angle 6$



## PAIDEIA SEMINAR PREP

- 1) Rewrite the first 12 of Euclid's elements in your own words.
- 2) Answer "Which of these definitions seems the most significant to you?" and explain why, in at least one paragraph. (this will be turned in)
- 3) Write at least 5 questions that you would like to discuss in the Paideia seminar.